

## TENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>20347W0</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/EP 03/ 08507</b>	International filing date (day/month/year) <b>31/07/2003</b>	(Earliest) Priority Date (day/month/year) <b>06/08/2002</b>
Applicant <b>DSM IP ASSETS B.V.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

Rec'd PCT/PTO 07 FEB 2005

International Application No

PCT/JP 03/08507

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N9/02 C12P13/22

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12P C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, CHEM ABS Data, WPI Data, PAJ, MEDLINE, EMBASE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE CA 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; NAKAYAMA, KIYOSHI ET AL: "Fermentative production of beta.-(3,4-dihydroxyphenyl)-L-alanine" retrieved from STN Database accession no. 83:7116 XP002224427	1-3,5, 8-10
Y	abstract & JP 49 100290 A (KYOWA HAKKO KOGYO CO., LTD.) 21 September 1974 (1974-09-21) ---	4,6,7
Y	US 5 837 504 A (LEE JANG YOUNG ET AL) 17 November 1998 (1998-11-17) the whole document --- -/--	4,7

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&amp;\* document member of the same patent family

Date of the actual completion of the international search

10 November 2003

Date of mailing of the international search report

17/11/2003

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/08507

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>GERIGK M R ET AL: "Enhanced pilot-scale fed-batch L-phenylalanine production with recombinant Escherichia coli by fully integrated reactive extraction."</p> <p>BIOPROCESS AND BIOSYSTEMS ENGINEERING, vol. 25, no. 1, April 2002 (2002-04), pages 43-52, XP002224425</p> <p>April, 2002</p> <p>ISSN: 1615-7591</p> <p>page 44, left-hand column, paragraph 4</p> <p>page 47, left-hand column, paragraph 2 -right-hand column, paragraph 2</p> <p>---</p>	6
A	<p>XUN LUYING ET AL: "Characterization of 4-hydroxyphenylacetate 3-hydroxylase (HpaB) of Escherichia coli as a reduced flavin adenine dinucleotide-utilizing monooxygenase."</p> <p>APPLIED AND ENVIRONMENTAL MICROBIOLOGY., vol. 66, no. 2, February 2000 (2000-02), pages 481-486, XP002224426</p> <p>ISSN: 0099-2240</p> <p>cited in the application</p> <p>the whole document</p> <p>---</p>	7,8
A	<p>BONGAERTS J ET AL: "Metabolic engineering for microbial production of aromatic amino acids"</p> <p>METABOLIC ENGINEERING, ACADEMIC PRESS,, US,</p> <p>vol. 3, October 2001 (2001-10), pages 289-300, XP002195863</p> <p>ISSN: 1096-7176</p> <p>cited in the application</p> <p>---</p>	
A	<p>US 3 928 431 A (BRODERMAN THORD ET AL)</p> <p>23 December 1975 (1975-12-23)</p> <p>the whole document</p> <p>---</p>	
A	<p>WO 95 33843 A (PURDUE RESEARCH FOUNDATION)</p> <p>14 December 1995 (1995-12-14)</p> <p>page 7, last paragraph -page 11, paragraph 2</p> <p>-----</p>	

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/08507

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 49100290	A	21-09-1974	JP 868772 C JP 51045674 B	30-06-1977 04-12-1976
US 5837504	A	17-11-1998	NONE	
US 3928431	A	23-12-1975	FI 48673 B AT 320140 B CA 996575 A1 CH 581095 A5 DE 2333375 A1 DK 140405 B ES 416750 A1 FR 2192846 A1 GB 1396235 A NL 7309698 A NO 139683 B SE 407743 B	02-09-1974 27-01-1975 07-09-1976 29-10-1976 24-01-1974 20-08-1979 01-02-1976 15-02-1974 04-06-1975 16-01-1974 15-01-1979 23-04-1979
WO 9533843	A	14-12-1995	US 5776736 A EP 0763127 A1 WO 9533843 A1	07-07-1998 19-03-1997 14-12-1995